Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Lateral Fins of Fishes. — Professor W. Salensky[1] has given a brief but important report on the development of the lateral fins of fishes. According to Gegenbaur, the lateral fins of fishes are derived from modified gill arches, and the fish in which the most primitive form of fin occurs is Ceratodus. Professor Salensky has studied the development of the lateral fins in the sterlet and in Ceratodus. In the pectoral fin of the sterlet the fifth to the tenth myotome produce muscle buds which give rise to the musculature of the fin. Myotomes posterior to these also give rise to buds which, however, abort. The fin rays do not produce basalia by the fusion of their proximal ends, but rays and basalia come from a common blastema. In Ceratodus the sixth to the tenth myotome contribute muscle buds to the fin. The skeleton of the fin appears in the form of a single rod of cartilage and the rays bud out from it without reference to the muscle buds. The rays are comparable with the secondary rays, not with the ordinary rays of the fish fin. The cartilage axis of the fin is homologous with one of the basalia. As the muscles of the Ceratodus fin arise as in other fishes, it is fair to assume that the Ceratodus fin is not a primitive fin, as Gegenbaur believed, but is a greatly reduced fin of the ordinary type. These facts in large measure destroy the slight support that Gegenbaur's archipterygium theory formerly had.

G. H. P.

The Chiasma of the Optic Nerves of the Amphibia has been studied by Franz Fritz (*Jen. Zeit.*, Bd. XXXIII, p. 191), both by microscopic and by degeneration methods. His most important result is that there is a total crossing of the optic nerves. Professor Kölliker has lately confirmed several of the results of Ramon y Cajal as to the existence of numerous unilateral and direct fibres in the chiasma of certain mammals (*Verhandl. Anat. Ges.*, Bd. XIII, 1899), and the fact that in some cases fibres divide in the opticus, and the two branches go to the two tracts.

Eigenmann on the Blind Fish of the Caves. — One of the most valuable contributions yet made to the literature of Organic Degeneration is a paper entitled "The Eyes of the Amblyopsidæ," being the first of a series on "The Eyes of the Blind Vertebrates of North America," by Dr. Carl H. Eigenmann. It is published in Roux's

---

[1] Salensky, W. Zur Entwicklungsgeschichte des Ichthyopterygiums, *Proc. Fourth Internat. Congress Zoöl.*, pp. 177–183. 1899.

Archiv für Entwickelungsmechanik der Organismen, seventy-two pages, with six plates, part of them colored, and ten figures in the text.

In this memoir Dr. Eigenmann describes the degraded condition of the eyes in the six known species of the Amblyopsidæ, three of them (*Chologaster cornutus*, *C. papilliferus*, and *C. agassizii*) with small but developed eyes, and three, *Amblyopsis spelæus*, *Typhlichthys subterraneus*, and *Troglichthys rosæ*, being blind. The blind species are not very close to one another, and each must have been independently derived from eyed forms. Typhlichthys is descended from Chologaster, the others from genera now extinct.

After an exhaustive study of the anatomical details, Dr. Eigenmann takes up the causes of the degeneration of the parts of the eye, and their replacement in the orbit by masses of fat. He considers in detail the theory that the organ diminishes with disuse (ontogenic degeneration) and that the effect of disuse appears to some extent in the next generations (phylogenic degeneration).

A second theory is that of panmixia, the cessation of selection in which the general average falls progressively the birth average as maintained in selection.

A third is a reversed action of natural selection, by which the organ degenerates through the migration of those with good eyes to the light, or through their extermination on account of the waste in weight or nutrition, or through injury to the useless eye.

Still another view is that of the struggle of the parts either for room or for food. By this the unused eye may be crowded out or starved.

Another view refers the degeneration of the organ to a struggle between soma and germ to produce the maximum efficiency of the former with the minimum expenditure of the latter.

Or again we may suppose that the result follows, through germinal selection, the struggle of the representatives in the germ.

Dr. Eigenmann calls attention to the fact that while we ought to consider, first, the causes of individual generation and, second, the processes or causes which led to its transmission, practically it is impossible to do so. Again the eye is itself a complex organ, and when each of its parts loses its utility, the degeneration progresses unequally. His final conclusion is, that "the condition of the eyes in the blind fishes can only be explained as the result of the transmission of *disuse* effect." The eye (functional) of Chologaster is symmetrically reduced from a larger normal fish eye. The retina is the first structure simplified. Later the lens and especially the vitreous body degenerated more rapidly than the retina. The muscles in Typhlichthys have disappeared. The scleral cartilages have not failed to the same extent as the active structures of the eye. The degeneration is in no case due to arrested development. D. S. J.

Abbott on the Marine Fishes of Peru. — An excellent piece of faunal work is "The Marine Fishes of Peru," by James Francis Abbott, published in the *Proceedings of the Academy of Natural Sciences of Philadelphia* for June, 1899.

The paper is based on the collections made by Rear-Admiral L. A. Beardslee, U. S. N., at Callao, while in command of the *Philadelphia*. This accomplished officer has long taken a deep interest in natural history matters, and this collection presented by him to Stanford University is a proof of such interest.

Mr. Abbott notes 102 species as recorded thus far from Peru, and thirty of them are included in the Beardslee collection. Mr. Abbott describes as new the following species from Callao: *Basilichthys octavius*, *Basilichthys regillus*, *Basilichthys jordani*, *Pisciregia beardsleei*, and *Sciæna gilberti*. The new genus Pisciregia is allied to the California genus Atherinopsis, having a similar non-protractile premaxillary, but the vomer is armed with recurved teeth; the outer teeth in the jaws are enlarged, and the first dorsal is very small. The abundance of species of large-sized Atherinidæ (Pez del Rey), constituting the genera Chirostoma, Atherinopsis, Atherinops, Basilichthys, and Pisciregia, excellent food fishes all, is one of the notable features of the fish fauna of the eastern Pacific. D. S. J.

Fishes of French Guiana. — Dr. Léon Vaillant has published in the *Bulletin* of the Museum at Paris a paper on fishes collected in French Guiana, mostly from fresh waters.

Two new species are described: *Arius physacanthus*, from Rio Mahury; and *Rivulus geayi*, from Rio Cachipour. The Arius is allied to *emphysetus* and should be placed with it in Sciadeichthys if the modern genera of Bleeker are adopted. D. S. J.

Australian Tunicata. — Students of the Tunicata have known for some years that Professor W. A. Herdman has been occupied with the investigation of the collections of this group belonging to the Australian Museum at Sydney, New South Wales, and his report has